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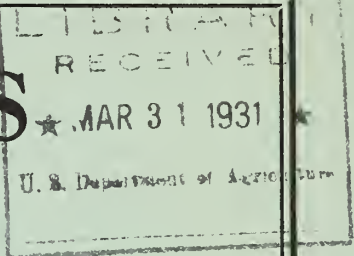
PROGRESS

of the

Barberry Eradication Campaign

in

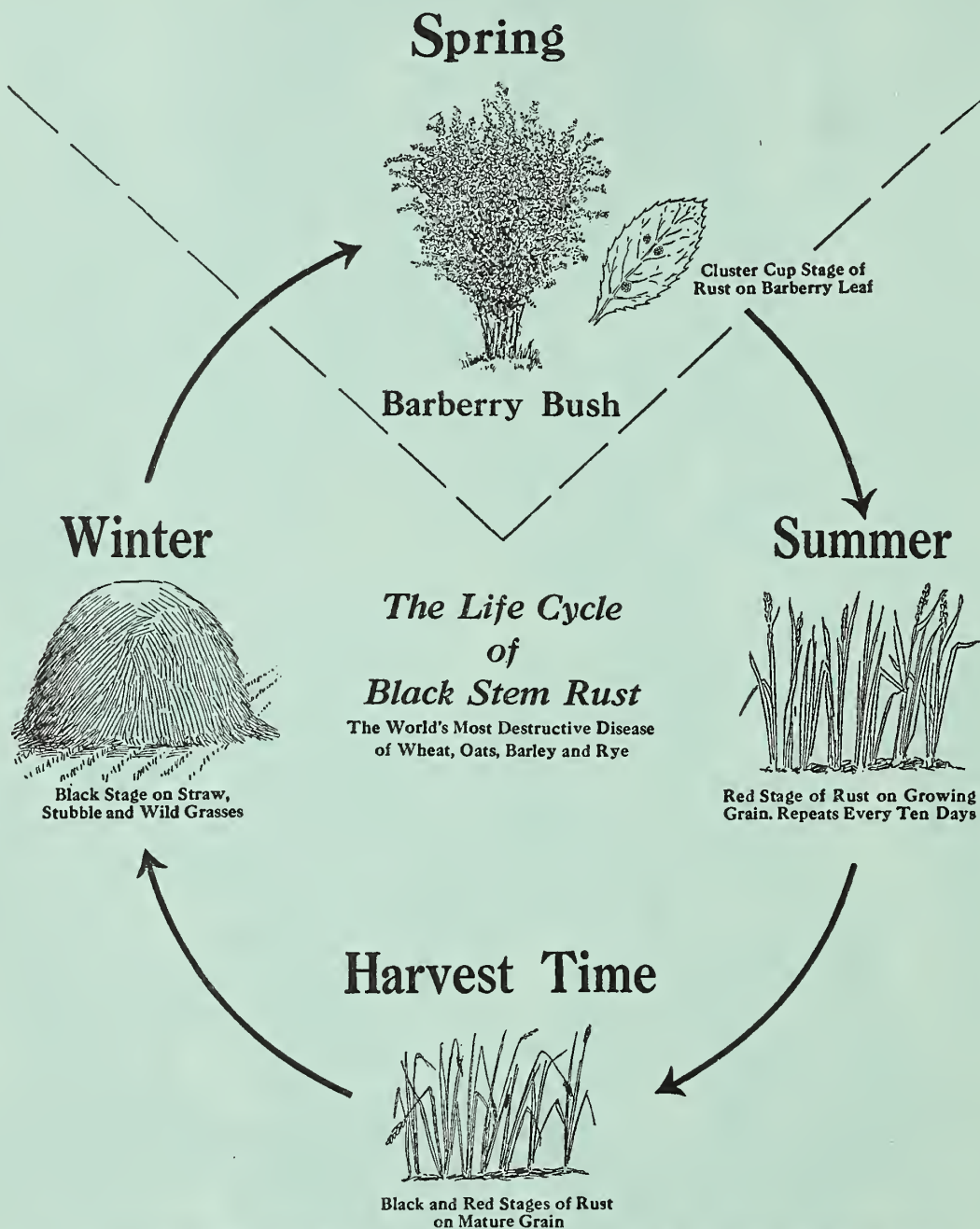
Ohio in 1930



*Black Stem Rust Spread From This Common Barberry Bush
To Near-by Grain Fields Causing Severe Damage*

Barberry Eradication Pays

Remove the Barberry and Break the Rust Cycle



All Common Barberries act as starting points for Black Stem Rust early each spring. By destroying the barberry the early spring source of black stem rust is eliminated. The Common Barberry provides a means to bridge the gap between the black stage on grain in the fall and the red stage of the rust on grains and grasses the following spring.

**BOOST BARBERRY ERADICATION—A PRACTICAL RUST
CONTROL MEASURE**

PROGRESS OF THE BARBERRY ERADICATION CAMPAIGN

IN OHIO, 1930

By Harry Atwood, Agent*

Office of Barberry Eradication, Bureau of Plant Industry

United States Department of Agriculture

Introduction

Ohio farmers lose annually thousands of bushels of wheat, oats, barley, and rye because of black stem rust. The tiny parasitic fungus causing this disease may live for a time, each season, on grain plants or other grasses and for a time on common barberry bushes. In the northern part of the United States stem rust can not be started in the spring without the aid of the common barberry. It has been definitely established that stem rust losses in various parts of Ohio have a definite correlation with the presence of common barberry. These losses are materially reduced when common barberry bushes are eliminated in grain producing regions.

A campaign to eradicate all common barberry bushes in thirteen States in the North-Central part of the United States was started in 1918. Ohio is one of these States.

Organization and Personnel

The Barberry Eradication Campaign is under Federal supervision. The work in Ohio is on a cooperative basis. The United States Department of Agriculture; the Conference for the Prevention of Grain Rust, Minneapolis, Minnesota; the

*Leader of Barberry Eradication in Ohio.

Ohio State Department of Agriculture; and various other agricultural agencies are making a concerted effort to eliminate this dread disease of small grains in Ohio.

Headquarters for the campaign in Ohio are located at 8 East Broad Street, Columbus, Ohio. An agent who is employed by the United States Department of Agriculture is in charge of the campaign. During the annual field season a number of temporary agents are employed for field duty.

Temporary field agents are selected on the basis of past experience in this or similar work, specific training for the task, scholastic standing, personality, maturity and reputation for conscientious work.

Financing

The barberry eradication campaign in Ohio derives its support mainly from funds appropriated by the Federal Government through the United States Department of Agriculture. The Ohio Legislature has voted a cash appropriation for the last four bienniums for this work.

Each year the Conference for the Prevention of Grain Rust furnishes thousands of pieces of illustrative and printed material for use in educational and publicity programs. Indirect aid, absolutely necessary to the progress of the campaign, has been furnished by other cooperating agencies in addition to the personal services of members of the Extension Staff of the College of Agriculture, Ohio State University.

Barberries and Stem Rust in Ohio

Common barberries have been found in every Ohio county. In some sections thousands of barberries have been found and destroyed.

Many severe local epidemics of stem rust occur in Ohio practically every year. In most cases infected barberries

Black Stem Rust

spreads from Common Barberry Bushes
to Wheat, Oats, Barley, Rye and many
Grasses



Black stem rust of small grains is caused by a tiny parasitic plant. In the Northern States it lives for a time each spring on the leaves of common barberry bushes. The dust-like spores of the rust are spread by the wind for miles from barberry bushes to grain fields and from one grain field to another. Warm, moist weather aids the rapid development and spread of stem rust, just as the growth of corn, wheat, or other crops is affected by favorable weather conditions. Destroy common barberry bushes and reduce losses from stem rust.

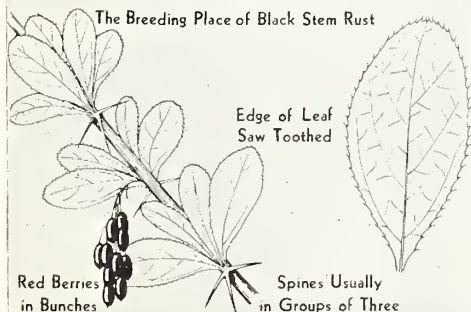
Learn to Know Common Barberry



COMMON BARBERRY

HARMFUL

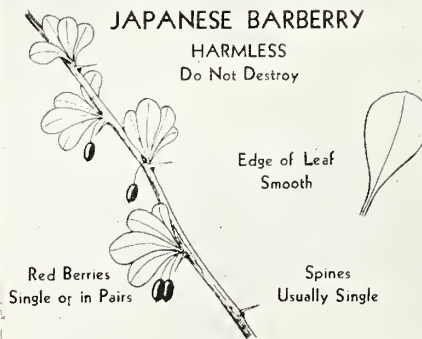
The Breeding Place of Black Stem Rust



JAPANESE BARBERRY

HARMLESS

Do Not Destroy



Report common barberry bushes you may find, to the Barberry Eradication Office in your State, your Agricultural College, your State Department of Agriculture, or the Barberry Eradication Office, United States Department of Agriculture, Washington, D.C.

are to be found in the vicinity of the grain fields affected. Of course, the severity and extent of such outbreaks depend a great deal on weather conditions. Hot, damp weather at the time of initial and subsequent infection, the topographical situation and the presence of susceptible grass hosts, all play an important role in the development and spread of rust.

Signed statements from farmers reveal the fact that individual farmers or groups of farmers have abandoned attempts to raise wheat because of the annual recurrence of black stem rust.

Epidemics of stem rust have become statewide in Ohio but usually such epidemics are only of a local nature.

A large number of cases are recorded in Ohio where severe local epidemics of stem rust on grains have been traced to infected barberries. In many such cases the removal of the barberries has prevented the recurrence of losses from this source.

Crown Rust of Oats

Crown rust was responsible for some loss in the oat crop this year in Ohio. Heavy infections of crown rust were found in two oat fields in Champaign County. In each instance careful inspection of the vicinity revealed the fact that dozens of plants of buckthorn (Rharnus lanceolata) were growing in the bottom land pastures adjacent to the grain fields.

Summary of Campaign Progress, 1918-1930

As a result of the enormous loss of wheat from black stem rust in 1916, it was decided to start a campaign to destroy all common barberry in the great spring grain-growing regions where rust losses had been so heavy.

A Federal appropriation was first voted for this pur-

pose in 1918. Observations were made on the general distribution of barberries in Ohio and the relation of such distribution to the occurrence of rust epidemics in various parts of the State. The preliminary survey was centered in the cities and towns of Ohio as it was believed the major portion of barberry plantings would be found among other shrubbery on lawns in urban localities.

In 1920 the first farm-to-farm survey was started in western Ohio. The farmstead method was used. In this method of survey farmyards, gardens, and orchards were inspected and if no fruiting bushes were found no search was made of adjacent waste lands and woodlots. This type of survey was continued for five years when it became evident that a more intensive method of survey was necessary. Barberries were reported growing wild in many parts of the State where no cultivated bushes were found at the time of survey. Some of these escaped barberries could be traced to plantings which had been removed years ago, while many, no doubt, were due to the scattering of seeds by birds and other animals.

In 1925 a new method of survey was adopted. This method embraced the careful survey on foot of all waste lands, woodlots, stream banks, and fence rows in addition to the inspection of the farmyards, orchards, gardens, etc. This method has been in constant use since its inception.

In addition to the first survey many properties where bushes were once found and destroyed have been checked to determine whether or not roots which may have been left in the ground had produced sprouts, whether bushes treated with chemicals had been killed, whether seed which may have been in the ground had produced seedlings, and whether bushes might have been overlooked on first survey.

Besides the first survey and resurvey in Ohio, 5.06 counties have been covered by second survey.

Summary of Campaign Progress, 1930

Field activities in Ohio for 1930 have been divided into four groups; namely, Survey and Eradication, Epidemiology studies, Ecology studies, and Education and Publicity.

The survey of Montgomery County was begun in 1929. In April, May, June, and the first half of July of this year, the work was continued in this county. The remaining 7 townships in the northwestern and the southern part of the county were surveyed. (Approximately 976 man days were required to cover this area.) The agents found, on second survey, in these remaining townships 1,775 barberry bushes and 12,851 seedlings on 284 properties. On the resurvey which was done in conjunction with the second survey in this area 504 sprouting bushes and 622 seedlings were found on 36 properties.

In Mercer County a combination second survey and resurvey was in progress during the last half July and the first part of August. (Approximately 644 man days were required to cover Mercer County.) The agents found on second survey in this county 113 barberry bushes and 25 seedlings on 22 properties. No sprouting bushes or seedlings were found on resurvey.

During the last half of August and through the months of September and October second survey and resurvey were centered in Miami County. The agents found on second survey in Miami County 230 barberry bushes and 249 seedlings on 85 properties. On resurvey in this County, 9 sprouting bushes and 34 seedlings were found on 6 properties.

Because of an urgent request (resubmitted through the County Agricultural Agent, Champaign County,) from a group of farmers in Harrison Township, a second survey was undertaken in that region during the month of July. Two barberry eradication agents, with the aid of several interested farmers, made a systematic survey of approximately three-fourths of Harrison Township in an effort to locate common barberries. The farmers in this particular area have suffered losses from black stem rust for a number of years.

In addition to the survey in these counties, two field agents spent two weeks investigating leads which have been sent into this office from time to time concerning the location of barberries in various parts of the State. As a result of this work bushes were found and destroyed in Butler, Champaign, Clinton, Delaware, Greene, Henry, Ottawa, Seneca, Shelby and Warren Counties, respectively.

This year as in former years an attempt was made to establish the date of the first occurrence and the prevalence of stem rust on barberries and on grains and grasses in the vicinity of barberries at widely separated points within the State. Many collections were made of pycnia and aecia on barberry leaves. Collections also were made of rust on wheat, oats, barley, rye and grasses for detailed study.

Observations were made in 44 counties and material collected in 28 counties in Ohio, in 1930. All sections of the State are represented in these counties.

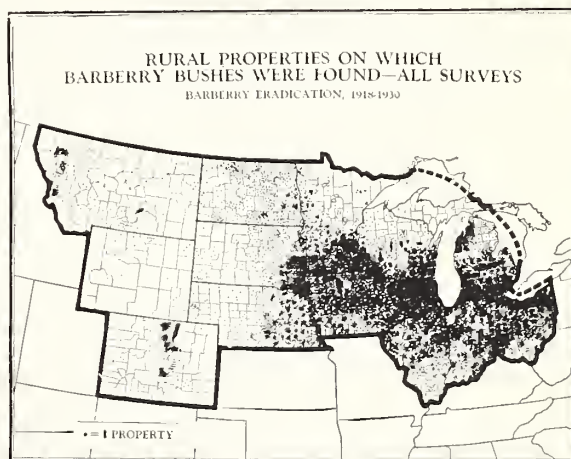
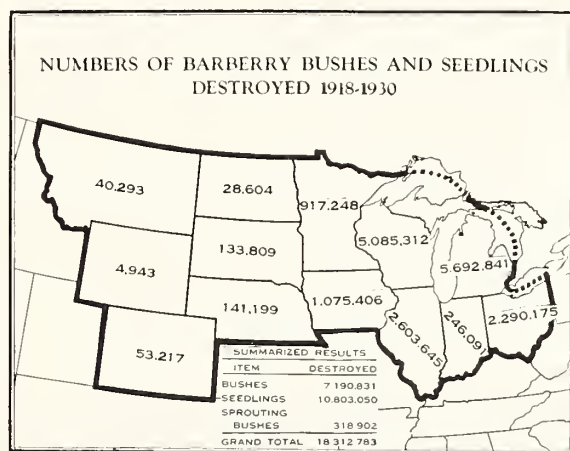
Data were taken and compiled on a set of experiments which were started in 1926 in Lorain and Geauga Counties and on another set of experiments which were begun in 1928 in Geauga and Ashtabula Counties pertaining to the behavior of barberry seedlings under various natural and artificial environmental conditions. Another like set of experiments was started in Lucas County in September of this year.

From 1918 to 1930 inclusive, approximately 410,970 barberry bushes and 1,859,914 seedlings have been found and destroyed on 12,387 properties in Ohio.

Nursery Survey

The campaign to destroy the common barberry has been in progress in Ohio for twelve years. At the beginning of the field work all nurseries in Ohio were inspected for B. vulgaris and its horticultural varieties. The common bar-

Every man, woman and child should consider it his or her duty to look for and report common barberry bushes.

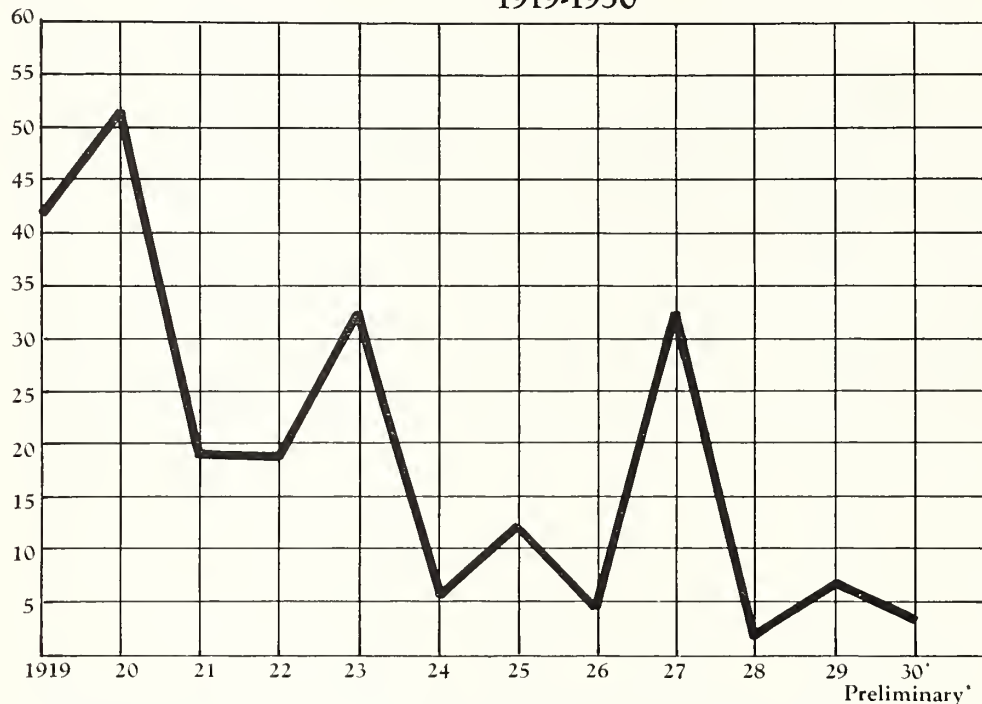


Prepared by the Rust Prevention Association, 300 Lewis Building, Minneapolis, Minn., in co-operation with Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D.C.

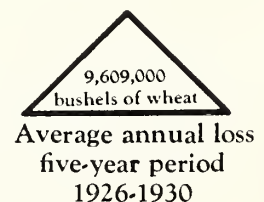
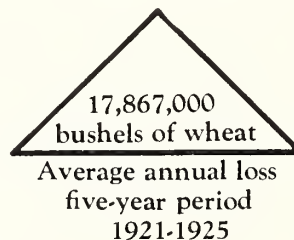
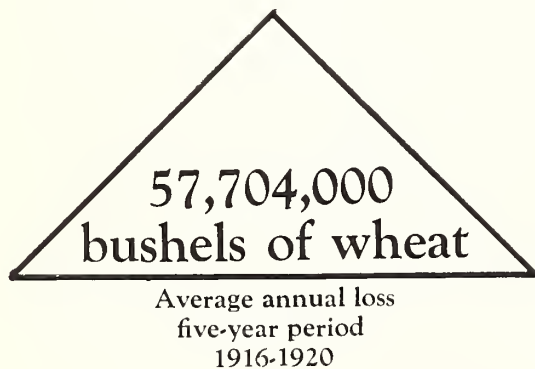
Barberry Eradication Pays

In Millions
of Bushels

Wheat losses in Barberry Eradication Area
1919-1930



The losses to small grain crops caused by black stem rust have been reduced since the beginning of the barberry eradication campaign in 1918. The breeding of rust-resistant varieties, the use of early maturing varieties, and the sowing of crops early, have aided in this reduction.



Millions of bushels of oats, barley and rye also are
damaged each year by black stem rust

Rust shriveled grain always is discounted

Destroy all Common Barberries—Reduce Losses from Stem Rust.
Receive the Highest Available Price for Grain.

berries found were destroyed.

In 1930 it was decided to make another survey of nurseries in Ohio. (The purpose of this survey was twofold. First: to obtain definite information as to the kinds and numbers of barberries being propagated in Ohio nurseries. Second: to inform the nurserymen of the known rust susceptible varieties and thus minimize the likelihood of their further distribution).

During the period April 1 to September 16 more than three hundred Ohio nurserymen were visited and more than four thousand acres of nursery stock inspected. The nurseries in all but six and one-half of the 88 counties in the State were covered and a report of the findings made. Susceptible varieties were found in 32 nurseries in 17 counties of the State.

Education and Publicity

The education and publicity program was carried forward as usual. Several hundred copies of the 1929 Progress Report were distributed to the following groups: colleges, universities, normal schools, high schools, nurserymen and farmers. Lists of rust susceptible barberries were sent to 500 nurserymen. Form letters and Department Circular No. 356 entitled "The Common Barberry and How to Kill It", were sent to 7,000 rural mail box holders in the areas in which the second survey was in progress. These letters were mailed just previous to the time actual survey operations were started in the area.

Demonstrations were held at the Ohio State Fair, Miami and Mercer County fairs, farmers' meetings and at county and community picnics. Other demonstrations were placed in post office buildings, windows of business houses and on street corners.

Roadside signs were used in Montgomery, Mercer and Miami Counties along main traveled highways. Thirty-five

articles appeared in local daily and weekly newspapers where survey operations were in progress. Thousands of bulletins were distributed and hundreds of personal contacts were made by field men in connection with survey activities.

Plans for the Future

In 1931 second survey should be continued in Champaign County and two or three adjacent counties. The experimental work now in progress should be continued and the rust investigations carried on as in previous years. Education and publicity work should go forward with renewed effort. There is much that can be done to bring our campaign to the attention of the public.

Resurvey should be carried on in conjunction with second survey and additional work be done in checking information supplied by interested individuals concerning barberry plantings in various sections of the State.

A survey of nurseries should be made in the six and one-half counties which were not covered during the past year.

Conclusions

Black stem rust causes an annual loss of thousands of bushels of small grain each year in Ohio alone. These losses are materially reduced by the removal of common barberry bushes. Every citizen should learn to know the common barberry and aid in its destruction.

Common barberry is growing wild in many areas in Ohio and if left undisturbed it would soon become a menace to every grain field in Ohio.

The United States Department of Agriculture asks the cooperation of every citizen in the State of Ohio in this work. It is only through united effort that this campaign can be brought to a successful completion.

Please report all bushes which you think may be common barberry to the Office of Barberry Eradication, Room 304, 8 East Broad Street, Columbus, Ohio.

PROPERTIES HAVING BARBERRY BUSHES 1918-1930

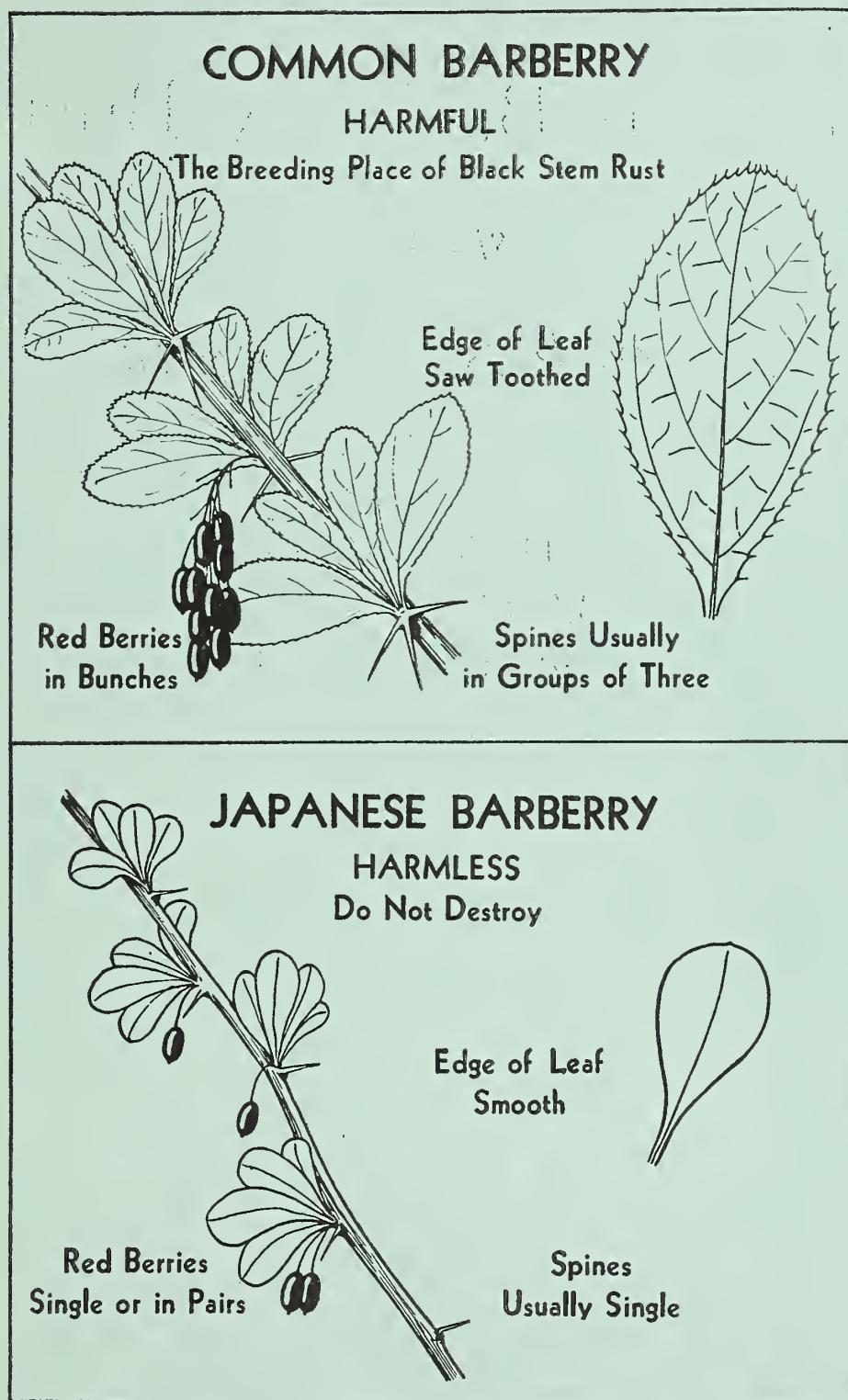
OHIO



12,388 PROPERTIES
2,290,182 BUSHES

FARMS HAVING BARBERRY BUSHES
TOWNS HAVING BARBERRY BUSHES

Common Barberry Spreads Black Stem Rust



Look For and Report All Common Barberry Bushes
To the State Leader of Barberry Eradication, in care of your State Department of Agriculture or your State Agricultural College.

Common Barberry Bushes

spread

Black Stem Rust

to

WHEAT, OATS,
BARLEY, RYE,
and Many Wild
Grasses

THIS Progress Report is prepared and printed by the Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C. The cover is furnished by the Conference for the Prevention of Grain Rust, 300 Lewis Building, Minneapolis, Minnesota.